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November 3, 2021

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Re: Comments on the Revised Data Gap Investigation Progress Summary and Soil Vapor Intrusion Status and Recommendations Memorandum.

- **Site Name:** Taylor Way and Alexander Avenue Fill Area (TWAAFA)
- **Site Address:** 1500 Block Taylor Way E, Tacoma, Pierce County, WA 98409
- **Agreed Order:** DE 14260
- **Enforcement Order:** DE 19410
- **Facility/Site ID:** 1403183
- **Cleanup Site ID:** 4692

Dear Tasya Gray and Scott Hooton:

Thank you for submitting the Revised Data Gap Investigation Progress Summary and Soil Vapor Intrusion Status and Recommendations memorandum (memo)[1] in response to the Department of Ecology's (Ecology) August 25, 2021, comment letter.[2] Below are our comments on the memo:

1. Burlington Environmental (BE) Property – Lab Pack Building: Please revise the memo to indicate that samples will be collected from each of the sub-slab monitoring points. Ecology does not agree that a single composite sample from the effluent of the depressurization system blower is adequate for characterization of sub-slab vapor concentrations beneath the Lab Pack Building for the following reasons:

a. The only analyses for volatile organic compounds (VOCs) that has been completed since the vapor intrusion (VI) mitigation system was installed were measurements with a portable photoionization detector (PID). These type of measurements are not adequate for determining what the source concentrations are for specific VOCs. Furthermore, a single composite sample from the effluent would not provide any information on the spatial distribution of VOCs beneath the building.

[1] DOF, *Revised TWAAFA Data Gap Investigation Progress Summary and Soil Vapor Intrusion Status and Recommendations*, September 24, 2021.
[2] Ecology, *Comments on the Data Gap Investigation Progress Summary and Soil Vapor Intrusion Status and Recommendation Memorandum*, letter, addressed to Tasya Gray (DOF) and Scott Hooton (Port of Tacoma), August 25, 2021.

b. There are significant deficiencies that need to be corrected in the monitoring of the VI mitigation system. These consist of:

i. In the system commissioning field report (Amec Foster Wheeler [AFW] 2017), the manifold line test showed sub-slab monitoring point (MP) vacuum levels that ranged from 0.11 to 0.22 inches water column (WC).[3] These vacuum readings were measured using a Dwyer magnehelic gauge with a 0-1 inch WC range. However, during the post-startup monitoring events, as documented in the forms in Attachment B of the memo, the vacuum readings for the monitoring points are very different. For example, the Attachment A-2, Lab Pack Building Vapor Mitigation Additional Maintenance Log from April 13, 2018, listed MP vacuum readings ranging from -1.298 to -5.616 inches WC. This is a large discrepancy from the initial measurements in AFW (2017). The MP vacuum readings in AFW (2017) are the values that would be expected based on the blower size. Therefore, there seems to be some type of error with the Attachment A-2 MP measurements. **Please investigate this issue and report to Ecology what caused this error and how it will be corrected for future monitoring events.**

ii. There does not appear to be any record of the annual calibration check of the individual methane sensors. The area to record this on the forms is generally blank except for the form from May 9, 2019, which stated that the annual calibration check was completed by others. **Annual methane sensor calibration checks need to be properly completed and documented.** Also, the monthly inspection form from September 29, 2020, stated that methane sensor MSG-3 had failed; however, there is no subsequent mention that this sensor was replaced. According to the Operation and Maintenance Manual (AFW 2018), the methane sensors should be replaced with the same or equivalent model every 5 years, with the first replacement to occur in May 2022.[4]

2. BE Property – Lab Pack Building, Indoor Air Samples: Ecology agrees that the collection of indoor air samples would be complicated by the background vapors from VOCs from facility operations. Therefore, Ecology agrees it is appropriate to initially perform sub-slab sampling. The sub-slab sampling results will then be compared to Ecology screening levels to determine if further evaluation and/or indoor air sampling is needed.

3. BE Property – Stabilization Building: Ecology agrees with the proposed sub-slab sample locations and with the proposed work except for the measurement of differential pressures. Ecology agrees that measurements should be collected both during times when the dust collection system is in operation and when it is turned off. However, please revise the memo to indicate that differential pressure data will be collected for several days (preferably a week or more) prior to sampling and will continue throughout the sample collection period. Collecting this information for several days will allow the inclusion of natural cyclic barometric pressure (BP) changes and the cyclic effects of the operation of the dust collection system.

[3] Amec Foster Wheeler (AFW), *System Commissioning Field Report, 1701 Alexander Drive, Tacoma, WA*, May 5, 2017.
[4] AFW, *Operations and Maintenance Manual, Vapor Mitigation System, 1701 Alexander Drive, Tacoma, WA*, March 26, 2018.

4. BE Property – Transportation Office and Shop: Ecology agrees with the proposed sub-slab sample locations and with the proposed work if measurement of differential pressures is also performed. Please revise the memo to indicate that differential pressure data will be collected for several days (preferably a week or more) prior to sampling and will continue throughout the sample collection period. As noted by EPA, normal changes in BP can be quite large and create pressure differentials across the building envelope. A regular diurnal variation of up to 300 Pascals (Pa) is common and weather fronts can cause BP to change by 1,000 Pa over several days.[5]

5. Former Potter Property: Ecology has the following comments on the vapor sampling and analysis plan (SAP) for the former Potter Property (Maul Foster Alongi [MFA] 2021):[6]

   a. Differential pressure measurements: Please revise the SAP to indicate that differential pressure data will be collected for several days (preferably a week or more) prior to sampling and will continue throughout the sample collection period.

   b. The SAP proposes to use MTCA Method C industrial sub-slab screening levels. Please note that this sub-slab screening level is the same as the MTCA Method B Sub-Slab Screening Level and that Ecology has not yet approved cleanup levels for the Site.

Please revise the memo to incorporate the above comments and submit for Ecology review within 30 days of the date of this letter. If you have any questions, please contact me at (360) 407-6247 or steve.teel@ecy.wa.gov.

Sincerely,

SSTeel

Steve Teel, LHG
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Ecology Site File

[5] EPA, Measuring Pressure (Differential and Barometric) as a Vapor Intrusion (VI) Indicator. Science in Action Fact Sheet. Available at: https://iavi.rti.org/workshops.html

[6] Maul Foster Alongi, *Ecology Review Draft, Vapor Sampling and Analysis Plan, Taylor Way and Alexander Avenue Fill Area, Former Potter Property, 1801 E. Alexander Avenue, Tacoma, WA*, September 23, 2021.